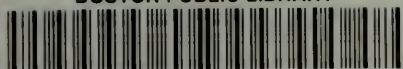


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No. 98

The Commonwealth of Massachusetts

ANNUAL REPORT

OF THE

DIRECTOR OF
LIVESTOCK DISEASE CONTROL

FOR THE

Year Ending November 30, 1938



Publication of this Document Approved by the Commission on Administration and Finance.

700-5-'39. No. 7248

Mass. Agric. Expt. Sta. Report 26, 1939

The Commonwealth of Massachusetts

DEPARTMENT OF AGRICULTURE

DIVISION OF LIVESTOCK DISEASE CONTROL

To the Commissioner of Agriculture:

The report of the Division of Livestock Disease Control for the year ending November 30, 1938, is presented herewith.

The appearance of two diseases contagious to animals and not previously encountered in the State—encephalomyelitis in horses and anthrax in mink—together with new legislation enacted during the year relative to blood test requirements on cattle received from outside the State and to calfhoo vaccination, all have had an effect on the activities of the Division.

The work in the eradication, prevention, and control of bovine tuberculosis has progressed satisfactorily and resulted in a further reduction in the yearly total number of reactors to the tuberculin test.

Rabies, which last year was causing concern because of its gradual increase, took a decided "about face," with the result that this year shows the lowest number of cases reported any year since 1917.

On September 27 a conference on encephalomyelitis was held at the office of the Division, at which there were present veterinarians, entomologists, and representatives of the United States Bureau of Animal Industry, United States Public Health Service, United States Army, New York and Massachusetts Departments of Public Health, Harvard Medical School, and Boston Children's Hospital.

Dr. Eugene L. Hannon of Pittsfield, Veterinary Health Officer of the Division, died on October 2, 1938. He was born in Stockbridge in 1886 and was graduated from the Ontario Veterinary College, Class of 1906. Dr. Hannon entered the employ of the Commonwealth in 1910 and at time of his death had charge of the work of the Division in Berkshire County.

Dr. Mark L. Miner of Greenfield, former Veterinary Health Officer of the Division, died on October 9, 1938. Dr. Miner was born in Richmond, Vermont, May 3, 1864, and was graduated from the Chicago Veterinary College, Class of 1889. He entered the service of the Commonwealth in 1894 and was retired in May, 1934.

BOVINE TUBERCULOSIS

With eradication of bovine tuberculosis its ultimate objective, the major activity of the Division this year, as for many years past, centered in the work of elimination and control of that disease in domestic animals.

This work with its many ramifications—tuberculin testing; appraisal and slaughter of reactor animals; supervision of disinfection of infected premises, vehicles, etc.; maintenance of the quarantine station at Brighton; control of interstate shipment of cattle; and supervision of cattle dealers' purchases and sales—not only occupies the major part of the time of the employees of the Division in both field and office, but constitutes its principal item of expense.

The continued finding of reactors to the tuberculin test, although fewer in number each year; the frequency with which so-called "breaks" occur in supposedly tuberculosis-free herds; and the occasional finding of extensively diseased animals at time of slaughter are evidence of the need of constant surveillance of all herds through periodic tuberculin testing of so-called "clean" herds on a yearly basis, of herds known to be infected on a sixty- to ninety-day basis, and of dealer herds on a ninety-day basis.

Flood conditions during the year and also the disastrous hurricane of September 21, 1938, handicapped the work of tuberculin testing in certain sections of the State. This is apparent in the table on "Tuberculin Testing by Months," when compared with a similar table for the year 1937.

The total number of herd tests in 1938 is 23,370, as compared with 25,016 in 1937; the total number of animal tests in 1938 is 226,325, as compared with 236,214 in 1937.

One thousand one hundred twenty-two (1,122) head of cattle, .49% of the total 226,325 head tested, were declared reactors to the tuberculin test, a percentage lower than previously recorded in this State and for the first time lower than the "less than .5%" required under the Federal plan for the eradication of tuberculosis for the rating of modified accredited tuberculosis-free areas.

As is shown by the table "County Infection," the percentage of reactors to the last test of the year applied to all cattle in the State again shows a reduction—.068%, as compared with .08% in 1937.

Although the total number of herds recorded in the State (23,195) is less than the number of the previous year (23,651), the total number of head again shows an increase (212,741, as compared with 210,201 in 1937).

Tests of 1,062 herds, 3,333 head, of the total of 23,370 herds, 226,325 head, are recorded as *first tests*, no previous tests having been recorded for the owners of these herds.

Two hundred eighty-nine (289) of the 1,122 reactors to the tuberculin test, or 25.75% were reported at time of slaughter as showing no visible lesions of tuberculosis. The carcasses of ten reactors were reported as extensively diseased and were condemned as unfit for food purposes.

The Federal regulation requiring that reactors be slaughtered within fifteen days of the date of appraisal if Federal compensation is to be allowed became effective July 1, 1938, and was adopted and put into force by the Division on that date.

Tuberculin testing continues to be conducted in cooperation with the United States Department of Agriculture, Bureau of Animal Industry. Veterinarians now assigned by the Federal Bureau are located in the areas of Leominster, Uxbridge, and New Bedford.

The following tabulation is a record of the work of veterinarians in tuberculin testing for the year:

	<i>Herds</i>	<i>Head</i>	<i>Reactors</i>
Veterinarians paid by the State on an annual salary basis	7,060	67,930	390
Veterinarians paid by the State on a per diem basis	12,494	121,212	517
Veterinarians paid by the owners	44	1,093	2
Veterinarians paid by the Federal Government	3,772	36,090	213
	<u>23,370</u>	<u>226,325</u>	<u>1,122</u>

Average appraisals, salvage, and indemnity were all slightly lower than for the previous year, as is shown by the following tables.

TUBERCULIN TESTING OF GOATS

During the year tuberculin tests were conducted in fourteen herds of goats. One hundred seven head were tested and one animal reacted, but showed no lesions on post mortem examination.

TUBERCULIN TESTS BY MONTHS—1938

FIRST TESTS	CLEAN				WITH REACTORS						
	Tested				Tested				Reacted		
	Herds	P. B.	Gd.	Total	Herds	P. B.	Gd.	Total	P. B.	Gd.	Total
1937											
December..	80	13	248	261	1		1	1		1	1
1938											
January....	128	33	327	360	2	1	4	5		2	2
February...	108	22	239	261	2		28	28		2	2
March.....	112	46	347	393	1		1	1		1	1
April.....	134	21	486	507							
May.....	122	1	227	228	2	1	3	4	1	1	2
June.....	107	22	340	362	2		5	5		2	2
July.....	64	8	243	251	2		16	16		3	3
August.....	36		111	111	1		1	1		1	1
September..	36	2	92	94							
October....	62		207	207	1		8	8		2	2
November...	73	11	287	298	2		3	3		2	2
Total....	1,062	179	3,154	3,333	16	2	70	72	1	17	18

RETESTS											
1937											
December..	1,955	2,579	18,981	21,560	29	65	1,605	1,670	5	178	183
1938											
January....	2,100	2,557	19,690	22,247	43	60	1,157	1,217	6	155	161
February...	1,649	2,488	15,043	17,531	34	260	1,768	2,028	11	83	94
March.....	2,417	2,664	21,003	23,667	50	178	1,288	1,466	21	109	130
April.....	2,775	4,598	25,779	30,377	55	399	1,906	2,305	17	129	146
May.....	2,371	2,189	19,502	21,691	40	43	1,227	1,270	4	89	93
June.....	1,783	887	12,196	13,083	19	6	375	381		46	46
July.....	1,039	386	6,897	7,283	16	7	438	445	2	58	60
August.....	1,112	476	6,675	7,151	13	6	306	312	3	41	44
September..	1,266	489	8,927	9,416	12	6	307	313	5	28	33
October....	1,687	1,528	13,688	15,216	17	46	1,009	1,055	1	54	55
November...	1,775	2,364	17,916	20,280	35	26	930	956	4	55	59
Total....	21,929	23,205	186,297	209,502	363	1,102	12,316	13,418	79	1,025	1,104

TOTAL	TESTS				REACTORS		
	Herds	P. B.	Gd.	Total	P. B.	Gd.	Total
1937							
December.....	2,065	2,657	20,835	23,492	5	179	184
1938							
January.....	2,273	2,651	21,178	23,829	6	157	163
February.....	1,793	2,770	17,078	19,848	11	85	96
March.....	2,580	2,888	22,639	25,527	21	110	131
April.....	2,964	5,018	28,171	33,189	17	129	146
May.....	2,535	2,234	20,959	23,193	5	90	95
June.....	1,911	915	12,916	13,831		48	48
July.....	1,121	401	7,594	7,995	2	61	63
August.....	1,162	482	7,093	7,575	3	42	45
September.....	1,314	497	9,326	9,823	5	28	33
October.....	1,767	1,574	14,912	16,486	1	56	57
November.....	1,885	2,401	19,136	21,537	4	57	61
Total.....	23,370	24,488	201,837	226,325	80	1,042	1,122

TUBERCULIN TESTS BY COUNTIES — 1938

FIRST TESTS	CLEAN				WITH REACTORS						
	TESTED				TESTED				REACTED		
	Herds	P. B.	Gd.	Total	Herds	P. B.	Gd.	Total	P.B.	Gd.	Total
Barnstable..	29	5	47	52							
Berkshire...	97	25	298	323	1	1	2	3	1		1
Bristol.....	110	12	385	397	1		8	8		2	2
Dukes.....	10		26	26							
Essex.....	66	29	195	224							
Franklin...	65		131	131							
Hampden...	108	6	350	356	1	1	1	2		1	1
Hampshire...	56	5	231	236							
Middlesex...	130	10	546	556	6		12	12		6	6
Nantucket...	4		10	10							
Norfolk....	67	10	137	147	1		1	1		1	1
Plymouth...	89	23	164	187							
Suffolk.....	3		3	3							
Worcester...	228	54	631	685	6		46	46		7	7
Total....	1,062	179	3,154	3,333	16	2	70	72	1	17	18

RETESTS											
Barnstable..	540	125	1,806	1,931	1		27	27		1	1
Berkshire...	2,011	3,197	22,382	25,579	26	19	927	946	1	83	84
Bristol.....	2,486	2,310	19,241	21,551	54	366	1,035	1,401	9	131	140
Dukes.....	119	21	672	693							
Essex.....	1,408	1,791	11,362	13,153	32	3	3,251	3,254	2	219	221
Franklin...	1,845	1,932	17,604	19,536	5		233	233		6	6
Hampden...	1,916	1,532	14,372	15,904	19	213	471	684	10	41	51
Hampshire...	2,037	2,901	16,859	19,760	25	98	644	742	8	68	76
Middlesex...	2,375	2,405	20,267	22,672	70	221	2,364	2,585	29	203	232
Nantucket...	37	14	390	404							
Norfolk....	1,025	1,091	7,944	9,035	32	12	641	653	1	77	78
Plymouth...	1,527	1,060	10,128	11,188	14	28	494	522	1	25	26
Suffolk.....	21	77	110	187	3		31	31		3	3
Worcester...	4,582	4,749	43,160	47,909	82	142	2,198	2,340	18	168	186
Total....	21,929	23,205	186,297	209,502	363	1,102	12,316	13,418	79	1,025	1,104

TOTAL	TESTS				REACTORS		
	Herds	P. B.	Gd.	Total	P. B.	Gd.	Total
Barnstable.....	570	130	1,880	2,010		1	1
Berkshire.....	2,135	3,242	23,609	26,851	2	83	85
Bristol.....	2,651	2,688	20,669	23,357	9	133	142
Dukes.....	129	21	698	719			
Essex.....	1,506	1,823	14,808	16,631	2	219	221
Franklin.....	1,915	1,932	17,968	19,900		6	6
Hampden.....	2,044	1,752	15,194	16,946	10	42	52
Hampshire.....	2,118	3,004	17,734	20,738	8	68	76
Middlesex.....	2,581	2,636	23,189	25,825	29	209	238
Nantucket.....	41	14	400	414			
Norfolk.....	1,125	1,113	8,723	9,836	1	78	79
Plymouth.....	1,630	1,111	10,786	11,897	1	25	26
Suffolk.....	27	77	144	221		3	3
Worcester.....	4,898	4,945	46,035	50,980	18	175	193
Total.....	23,370	24,488	201,837	226,325	80	1,042	1,122

COUNTY INFECTION
STATUS OF HERDS ON NOVEMBER 30, 1938, 1937, 1936

1938	TESTS		REACTORS		
	Herds	Head	Herds	Head	Reactors
Barnstable.....	557	1,939			
Berkshire.....	2,107	25,935	7	200	21
Bristol.....	2,536	20,977	7	91	12
Dukes.....	138	751			
Essex.....	1,567	13,964	10	673	25
Franklin.....	2,016	20,609			
Hampden.....	1,935	15,070	2	19	2
Hampshire.....	2,082	20,099	7	217	15
Middlesex.....	2,574	23,468	12	381	24
Nantucket.....	41	414			
Norfolk.....	1,067	8,953	4	41	6
Plymouth.....	1,612	10,988	4	79	4
Suffolk.....	22	175			
Worcester.....	4,941	49,399	18	480	37
Total.....	23,195	212,741	71	2,181	146

1937	TESTS		REACTORS		
	Herds	Head	Herds	Head	Reactors
Barnstable.....	572	1,909			
Berkshire.....	2,153	26,194	3	64	9
Bristol.....	2,590	20,454	9	163	12
Dukes.....	143	703			
Essex.....	1,614	13,924	11	843	28
Franklin.....	2,050	20,590			
Hampden.....	1,958	14,866	4	102	14
Hampshire.....	2,152	19,633	4	149	7
Middlesex.....	2,645	23,054	8	151	39
Nantucket.....	45	452			
Norfolk.....	1,079	8,842	1	141	4
Plymouth.....	1,620	10,453	4	88	23
Suffolk.....	22	176			
Worcester.....	5,008	48,951	25	549	41
Total.....	23,651	210,201	69	2,255	177

1936	TESTS		REACTORS		
	Herds	Head	Herds	Head	Reactors
Barnstable.....	617	1,999			
Berkshire.....	2,243	26,461	22	430	39
Bristol.....	2,675	19,817	13	246	15
Dukes.....	147	707	1	2	1
Essex.....	1,643	13,869	9	722	29
Franklin.....	2,136	20,573	2	63	25
Hampden.....	1,998	14,866	4	140	6
Hampshire.....	2,221	19,585	6	220	9
Middlesex.....	2,656	22,509	10	299	17
Nantucket.....	47	481			
Norfolk.....	1,105	8,951	1	33	20
Plymouth.....	1,673	10,355	3	143	5
Suffolk.....	20	189			
Worcester.....	5,117	49,582	34	786	94
Total.....	24,298	209,944	105	3,084	260

APPRAISALS

	PUREBREDS			GRADES			TOTAL		
	Head	Amount	Average	Head	Amount	Average	Head	Amount	Average
1937									
December.....	5	\$800.00	\$160.00	179	\$13,085.00	\$73.10	184	\$13,885.00	\$75.46
1938									
January.....	6	980.00	163.33	157	17,325.00	110.35	163	18,305.00	112.30
February.....	10	1,465.00	146.50	85	8,320.00	97.88	95	9,785.00	103.00
March.....	18	2,700.00	150.00	110	11,600.00	105.45	128	14,300.00	111.72
April.....	13	2,105.00	161.92	129	14,075.00	109.11	142	16,180.00	113.94
May.....	5	660.00	132.00	90	9,815.00	109.05	95	10,475.00	110.26
June.....				48	5,065.00	105.52	48	5,065.00	105.52
July.....	2	250.00	125.00	61	5,690.00	93.28	63	5,940.00	94.29
August.....	3	445.00	148.33	42	3,977.50	94.70	45	4,422.50	98.28
September.....	5	825.00	165.00	28	2,865.00	102.32	33	3,690.00	111.82
October.....				55	5,340.00	97.09	55	5,340.00	97.09
November.....	4	785.00	196.25	56	5,565.00	99.38	60	6,350.00	105.83
Total, 1938.....	71	\$11,015.00	\$155.14	1,040	\$102,722.50	\$98.77	1,111	\$113,737.50	\$102.37
Total, 1937.....	149	\$23,922.50	\$160.55	1,125	\$114,218.00	\$101.53	1,274	\$138,140.50	\$108.43

SALVAGE

	PUREBREDS			GRADES			TOTAL		
	Head	Amount	Average	Head	Amount	Average	Head	Amount	Average
1937									
December.....	5	\$273.82	\$54.76	179	\$6,444.33	\$36.00	184	\$6,718.15	\$36.51
1938									
January.....	6	230.15	38.36	157	5,586.34	35.58	163	5,816.49	35.68
February.....	10	438.80	43.88	85	2,679.42	31.52	95	3,118.22	32.82
March.....	21	649.12	30.91	110	4,066.59	36.97	131	4,715.71	36.00
April.....	13	563.28	43.33	129	5,285.10	40.98	142	5,848.38	41.19
May.....	5	231.00	46.20	90	4,067.48	45.19	95	4,298.48	45.25
June.....				48	1,703.27	35.48	48	1,703.27	35.48
July.....	2	70.00	35.00	61	1,868.08	30.62	63	1,938.08	30.76
August.....	3	87.65	29.22	42	1,239.90	29.52	45	1,327.55	29.50
September.....	5	192.39	38.49	28	1,086.52	38.80	33	1,278.91	38.76
October.....				54	1,633.70	30.25	54	1,633.70	30.25
November.....	4	162.95	40.76	55	1,695.36	30.82	59	1,858.31	31.49
Total, 1938.....	74	\$2,899.16	\$39.18	1,038	\$37,356.09	\$35.99	1,112	\$40,255.25	\$36.21
Total, 1937.....	149	\$6,534.59	\$43.85	1,123	\$41,124.26	\$36.62	1,272	\$47,658.85	\$37.47

INDEMNITY

	PUREBREDS			GRADES			TOTAL		
	Head	Amount	Average	Head	Amount	Average	Head	Amount	Average
1937									
December.....	5	\$278.10	\$55.62	56	\$1,892.33	\$33.79	61	\$2,170.43	\$35.58
1938									
January.....	6	373.67	62.28	157	5,855.09	37.29	163	6,228.76	38.21
February.....	10	513.11	51.31	83	2,600.81	31.34	93	3,113.92	33.48
March.....	18	1,020.45	56.69	107	3,598.04	33.62	125	4,618.49	36.95
April.....	13	767.12	59.01	129	4,392.76	34.05	142	5,159.88	36.34
May.....	5	214.50	42.90	89	2,847.25	31.99	94	3,061.75	32.57
June.....				46	1,594.01	34.65	46	1,594.01	34.65
July.....	2	140.00	70.00	61	1,910.91	31.32	63	2,050.91	32.55
August.....	3	173.00	57.67	42	1,368.81	32.59	45	1,541.81	34.29
September.....	5	316.31	63.26	28	885.27	31.62	33	1,201.58	36.41
October.....				54	1,774.90	32.87	54	1,774.90	32.87
November.....	4	294.26	73.56	55	1,885.07	34.27	59	2,179.33	36.94
Total, 1938.....	71	\$4,090.52	\$57.61	907	\$30,605.25	\$33.74	978	\$34,695.77	\$35.48
Total, 1937.....	149	\$8,531.39	\$57.26	1,099	\$36,008.43	\$32.77	1,248	\$44,539.82	\$35.69

INERSTATE MOVEMENT OF CATTLE

The movement or transportation of cattle into the Commonwealth of Massachusetts was affected to a marked extent by Chapter 168, Acts of 1938, passed by the General Court and approved April 5, 1938, and effective on July 4, 1938. This law, referred to as "An Act relative to the control of the importation of animals affected with Bang's Abortion Disease," reads as follows:

Chapter one hundred and twenty-nine of the General Laws is hereby amended by striking out section twenty-six A, as appearing in the Tercentenary Edition, and inserting in place thereof the following: — *Section 26A.* Whoever ships, drives or transports into the commonwealth cattle to be used for dairy purposes, unless they have been inspected and passed as healthy by a veterinary inspector of the United States Bureau of Animal Industry or a veterinarian of the state of origin authorized by the state and approved by said bureau and are accompanied by a certificate of health approved by the proper livestock officials of the state of origin stating that each such animal six months of age or over was negative to an agglutination blood test for Bang's abortion disease applied within thirty days prior to entry, shall be punished by a fine of not more than two hundred dollars.

Under the provisions of this law it is required that in addition to the permit, made necessary by Division Order No. 42, each shipment of dairy cattle into Massachusetts must be accompanied by a certificate of health approved by the proper livestock official of the state of origin.

For the proper enforcement of the law, it was necessary to revoke Division Order No. 44 and to invoke new regulations, as follows:

To Transportation Companies, Inspectors of Animals, and All Persons Whom It May Concern:

Division Order No. 44 is hereby revoked and the following Order to be known as Order No. 45 submitted therefor:

Whereas it is deemed necessary, for the protection of the livestock interests of the Commonwealth, to restrict shipments into this Commonwealth of cattle assumed to be affected with Bang's abortion disease (Chapter 168, Acts of 1938)

Now therefore, acting under and by virtue of the authority vested in me by the provisions of Chapter 129 of the General Laws (Tercentenary Edition) and all Acts and Amendments thereof and in addition thereto, and all other authority me hereto enabling, I do hereby make the following order and regulation:—

Section 1. All bovine animals, six months of age or over, shipped, driven, or in any way transported into the Commonwealth of Massachusetts from any point outside thereof to be used for dairy purposes unless they have been inspected and passed as healthy by a veterinary inspector of the United States Bureau of Animal Industry or a veterinarian of the state of origin authorized by the state and approved by said Bureau and are accompanied by a certificate of health approved by the proper livestock officials of the state of origin stating that each animal six months of age or over was negative to an agglutination blood test for Bang's abortion disease applied within thirty days prior to entry, are hereby declared to be in quarantine and, pending a decision by the Director of Livestock Disease Control as to their disposal or release as provided in Section 2 of this Order, shall be segregated at the risk and expense of the owner or the person, firm or corporation in whose charge such animals are held.

Section 2. All bovine animals quarantined under the provisions of Section 1 of this Order may be released by order of the Director, providing the owner or his authorized representative shall agree:

A. To return said animals immediately to the state in which shipment originated; or

- B. To arrange for the immediate slaughter of said animals and to furnish the Director, as evidence of killing, a statement signed by the inspector of slaughtering under whose inspection slaughter took place giving information as to the identification of each animal and the date and place of slaughter; *or*
- C. To submit to the laboratory of the Division of Livestock Disease Control a sample of blood from each of said animals, which blood must be drawn by a registered veterinarian employed by and at the expense of the owner, or the person, firm, or corporation in whose charge such animals are held, said animals to be released by the Director if the report of the laboratory test is negative, or to be disposed of by the owner or his authorized representative in accordance with option A or B of this Section if the test is reported by the laboratory otherwise than negative.

This order shall become effective July 4, 1938, and shall be published by the Inspector of Animals in each city and town in the Commonwealth by filing a copy hereof with the City Clerk or the Town Clerk as the case may be and by posting a copy hereof in a conspicuous public place within the city or town for which he is the Inspector of Animals.

CHARLES F. RIORDAN,

Director of Livestock Disease Control.

Approved:

WILLIAM CASEY, *Commissioner of Agriculture.*

Approved in Council June 13, 1938:

WILLIAM L. REED, *Executive Secretary.*

Under the law (Chapter 168, Acts of 1938), as interpreted by the office of the Attorney General, cattle entering Massachusetts for pasture purposes and cattle returning from out-of-state pasturage must be accompanied by a certificate of blood test made within thirty days prior to entry, as specified in the law. Cattle entering the State for exhibition purposes are exempt, however, from that requirement. It was also ruled by the Attorney General that the clause "negative to an agglutination blood test" be interpreted to imply that the test must have resulted negatively to all dilutions or titres normally recorded by the official laboratory of the state from which the consignment originated.

The effect of the change in interstate shipment requirements is reflected in the tabulation of receipts of dairy cattle at the quarantine station at Brighton and at points other than Brighton.

QUARANTINE STATION AT BRIGHTON

The receipts at the dairy section of the quarantine station, indicating the origin and disposition of cattle received, are as follows:

	Released on Papers	Held for T.B. Test Released	HELD FOR BLOOD TEST			Total
			Released	Ret'd to State of Origin	Killed	
Origin:						
Interstate:						
Canada.....	40					40
Connecticut.....	3					3
Maine.....	4,137	1				4,138
New Hampshire.....	1,293	9				1,302
New York.....	78					78
Rhode Island.....	10					10
Vermont.....	1,573	12	4	5	2	1,596
	7,134	22				
Massachusetts.....	2,303	4	4	5	2	7,167
						2,307
	9,437	26	4	5	2	9,474
Held over, 1937, Vermont....		2				2
Total.....	9,437	28	4	5	2	9,476

DISPOSITION

	<i>Interstate</i>	<i>State</i>	<i>Total</i>
Massachusetts	5,990	2,178	8,168
Rhode Island	1,165	129	1,294
Vermont	7	—	7
	<u>7,162</u>	<u>2,307</u>	<u>9,469</u>
Returned to state of origin, or killed	7	—	7
	<u>7,169</u>	<u>2,307</u>	<u>9,476</u>

The importance of preventing contact at the sales barn between blood-tested cattle and cattle which have not been subjected to the blood test was recognized and a section of the barn was set aside as an area for handling cattle which are certified as negative to the blood test. Cattle, state or interstate, eligible for housing in that portion of the sales barn must be accompanied by proper health certificates of blood test.

Arrivals from other states on and after July 4 totalled 2,873 head. Two thousand eight hundred sixty-two (2,862) head which were accompanied by satisfactory health certificates were released. Eleven (11) head—all from Vermont—were held. Of these, five were returned to Vermont without test, four were tested and found negative to the agglutination test and were released, and one was reported doubtful to the agglutination test and was slaughtered, and one was slaughtered at the request of the owner without test.

As a result of rumors regarding irregularities in connection with blood tests of cattle which arrive at the quarantine station, blood tests, without advance notice to owners or shippers, were conducted as follows:

Week of September 5:

	<i>Cattle Received</i>	<i>Bloods Drawn</i>
Maine	73	33
New Hampshire	36	14
Vermont	14	7
Total	<u>123</u>	<u>54</u>

Week of November 22:

Connecticut	3	3
Maine	87	33
New Hampshire	44	19
Vermont	36	15
Total	<u>170</u>	<u>70</u>

With few exceptions the results proved satisfactory and a report of the findings was sent to the livestock officials of the states from which the cattle were received.

There were also received for slaughter at the Brighton station the following diseased cattle:

	<i>Mass.</i>	<i>N. H.</i>	<i>Vt.</i>	<i>Total</i>
Tuberculin test reactors	476	—	—	476
Tuberculosis suspects	6	—	—	6
Bang's disease reactors	10	6	—	16
Bang's disease suspects	—	2	2	4
Bang's disease suspects (on permit-to-kill basis)	—	—	2	2
Mastitis	4	—	1	5
Mange	2	—	2	2
Actinomycosis	1	—	—	1
	<u>499</u>	<u>8</u>	<u>5</u>	<u>512</u>

These cattle were checked, tagged, and released to slaughtering establishments for immediate slaughter.

One hundred forty-four (144) head of Canadian dairy cattle were received at the stock yard station by rail; 40 were released at the sales barn; 104 accompanied by official permits, were transferred to trucks and allowed to proceed to the destinations named in the permits.

Four hundred forty-six (446) trucks and 3 railroad cars were cleaned, washed, and disinfected at Brighton under the direct supervision of an employee of the Division. The sales barn is cleaned, washed, and disinfected at regular intervals.

Two thousand three hundred twenty (2,320) head of cattle were treated in prevention of hemorrhagic septicemia, or shipping fever. This service is given only upon request of the owners of cattle.

ARRIVALS AT POINTS OTHER THAN BRIGHTON

Three thousand seven hundred twenty-nine (3,729) permits, as required by Division Order No. 43, were issued in 1938, as compared with 4,198 in 1937. Of this number, 223 permits covered shipments of cattle for exhibition purposes. There were received on these permits 17,346 dairy cattle, 886 exhibition cattle, and 4,979 cattle consigned for immediate slaughter. The dairy cattle originated at the following points:

Canada	2,203	New Jersey	22
Connecticut	1,429	New York	1,280
Georgia	1	Ohio	960
Illinois	2	Oregon	1
Indiana	48	Pennsylvania	318
Maine	649	Rhode Island	696
Maryland	2	Vermont	6,429
Michigan	254	West Virginia	1
Minnesota	313	Wisconsin	556
Missouri	28	Wyoming	1
New Hampshire	2,053		
Total			17,346

Of the total number received, 16,884 were released on certificates of health issued by the state or country of origin and 462 were held and retested. Four hundred fifty-eight (458) of those held and retested were released, and 4 which reacted were condemned and slaughtered. Two of the reactors showed no visible lesions of tuberculosis and one proved to be a generalized case.

Six thousand seven hundred five (6,705) of the 17,346 head received arrived after July 4. One hundred three (103) were unaccompanied by acceptable or properly approved certificates of health. Concerning these 103 cattle, blood samples were drawn by veterinarians at the expense of the owner or shipper and were submitted for laboratory examination. The result was that 95 (negative) were released, 7 (5 positive and 2 doubtful) were slaughtered, and 1 was returned to the state of origin.

Origin of cattle arriving at points outside of Brighton on and after July 4:

Canada	1,462	New Jersey	16
Connecticut	330	New York	362
Maine	238	Ohio	280
Indiana	23	Pennsylvania	72
Maryland	1	Rhode Island	219
Michigan	134	Vermont	2,697
Minnesota	77	Wisconsin	249
New Hampshire	545		
Total			6,705

RECAPITULATION

The total number of cattle received interstate was 24,513 (7,167 at Brighton and 17,346 at other points), as compared with 29,136 in 1937 (9,016 at Brighton and 20,120 at other points).

The following table is an analysis of the sections from which cattle were received interstate:

Canada	2,243
New England states	18,305
New York	1,458
Southern states	344
Western states	2,163
Total	24,513

ADDENDUM

Other legislation, Chapter 386, Acts of 1938, effective September 1 (copy of which follows), although primarily a police bill intended for the purpose of preventing "cattle rustling" or stealing, also should be of benefit in preventing the "bootlegging" of cattle interstate.

Chapter one hundred and twenty-nine of the General Laws is hereby amended by inserting after section thirty-six B, inserted by chapter three hundred and fourteen of the acts of the current year, the following new section:—*Section 36C.* No person, except the owner of the cattle being transported or a person acting under written authority of such owner, shall transport neat cattle on any public highway unless he then has in his possession a bill of sale or a memorandum signed by the owner of such cattle and containing the owner's address, the number, breed and ear tag number of the cattle and the name of the place or places to which the cattle are to be transported. Any person, except as aforesaid, transporting such cattle shall on demand exhibit such bill of sale or memorandum to any officer qualified to serve criminal process. Whoever violates any provision of this section shall be punished by imprisonment in the state prison for not more than five years, or in a jail or house of correction for not less than thirty days nor more than two and one half years, or by a fine of not more than two hundred dollars.

CATTLE EXPORTS

One thousand three hundred one (1,301) head of cattle, identified and released at the dairy section of the quarantine station at Brighton, were transported direct to other states. In addition, interstate shipping certificates were issued by the Division covering 4,776 head of Massachusetts cattle for consignment to other states and countries. The following tabulation is a record of cattle exports:

From the quarantine station at Brighton:

Destination	Head		
Rhode Island	1,294	Vermont	7
			1,301

From Massachusetts herds:

Destination	Head	Destination	Head
Alabama	1	New Jersey	20
California	15	New York	285
Colorado	1	Ohio	24
Connecticut	1,830	Oregon	1
Florida	1	Pennsylvania	13
Georgia	1	Rhode Island	1,624
Illinois	14	Texas	1
Indiana	4	Vermont	386
Iowa	2	Virginia	5
Louisiana	2	Washington	1
Maine	127	West Virginia	22
Maryland	4	Wisconsin	9
Michigan	6		
Minnesota	2	Australia	1
Mississippi	1	Canada	6
Missouri	3	Jamaica	1
New Hampshire	362	Puerto Rico	1
		Total	4,776

LICENSED CATTLE DEALERS

The law, (Chapter 426, Acts of 1935), by which it is required that persons engaged in the business of dealing in cattle for dairy purposes must obtain annually a license to engage in such business, continues to be of great value, not only to the dairy farmer by assuring him protection regarding the health status of cattle which he may purchase, but to the Division itself by keeping it informed concerning the activities of cattle dealers. As a rule dealers express the opinion that the law is of benefit to them also because it has a tendency to discourage the activities of unscrupulous traders.

A thorough check by the Division of the weekly reports which dealers are required to make results frequently in preventing the addition of animals of questionable status to disease-free herds.

Two hundred eighty-four (284) licenses were issued in 1938. Two licenses were temporarily suspended and four were revoked for non-compliance with the requirements of the Division in connection with dealers' licenses. Four of these licenses were renewed upon payment of the five-dollar renewal fee required by law.

Cattle dealers reported the sale of 31,362 cattle during the year, of which 29,296, intended for dairy purposes, were checked for purpose of identification as proper additions to tuberculosis-free supervised herds. Two thousand sixty-six (2,066) were sold by dealers for slaughter.

A conviction against one dealer in the Town of Greenfield for dealing in cattle without a license was obtained in the district court in Greenfield and a suspended fine of \$25. imposed. A verdict which carried a fine of \$50. was obtained in the superior court at Lawrence against the Newburyport dealer referred to in the report of this Division for the year 1937.

BANG'S ABORTION DISEASE

Although recognized as a contagious disease of serious economic importance to the dairy industry and to some extent a public health problem, Bang's abortion disease differs radically from other contagious diseases of animals. It is rarely diagnosed from physical symptoms alone or as a result of a systemic reaction to any type of test applied to the animal itself—diagnosis depending wholly on results obtained by laboratory methods.

There still continues to be a decided difference of opinion on the part of owners of cattle, veterinarians, and investigators as to the better method of procedure to pursue in the control of Bang's abortion disease—whether through attempted eradication by blood-test-and-slaughter, or by an endeavor to establish acquired protection with possible immunity by vaccination.

Interest in the control or eradication of any of the many contagious diseases of domestic animals through the blood-test-and-slaughter method depends largely upon whether compensation for animals destroyed is provided. This situation has always existed regardless of the nature of the disease and whether eradication or control is desirable for economic or public health reasons. The extermination of contagious pleuro-pneumonia of cattle in the epidemic of 1860-'61 (to which epidemic this branch of the State service owes its origin) was accomplished only as a result of slaughter, with compensation for all affected and contact cattle destroyed. The same is true regarding glanders in horses and foot-and-mouth disease in cattle, sheep, and swine. Never would bovine tuberculosis have been brought to its present low point without the aid of compensation. This same situation would undoubtedly exist in regard to Bang's abortion disease if eradication were to be attempted by slaughter.

Exponents of the vaccination method of approaching the problem believe that destruction of reactors to the agglutination blood test without due consideration being given to breeding, production record, etc., is economically unsound and claim that control or even eradication of the disease through the proper use of vaccine is a more reasonable possibility.

As in previous years, this Division, except for supplying the vials to use in obtaining blood samples and offering laboratory service for examination of these sam-

ples, has not entered into any active campaign in connection with either eradication or control of Bang's abortion disease. The vials and laboratory service are both provided without charge.

The so-called Massachusetts plan for the accreditation of herds as free from Bang's abortion disease, while it has an appeal for those interested in the sale of purebred cattle, has little as yet to offer the majority of cattle owners. However, during the year 13 herds containing 567 head of cattle have been awarded Bang's abortion disease-free accredited herd certificates. Twenty-nine (29) of the herds accredited in 1937 were re-accredited, making a total of 42 herds containing 1,849 head of cattle accredited at this time. During the year 19,629 samples of blood from 545 herds were received for examination. Of this number 16,715 were negative to the agglutination blood test and 854 were positive.

Blood testing by the United States Bureau of Animal Industry under the Federal elimination plan has continued as in the past few years. Four thousand six hundred seventy-three (4,673) blood samples from 59 herds were drawn during the year by veterinarians in the employ of the Federal government. One hundred fifty-seven (157) bloods indicated positive reactions and the animals from which the bloods were drawn were tagged, branded, and disposed of as required by Federal regulations.

CALFHOOD VACCINATION

Experiments under way in Massachusetts conducted by the Federal Bureau in calfhood vaccination appear from all reports to be quite promising, but until a sufficient number of such vaccinated calves have passed through several pregnancies and have continued to remain negative to blood tests, no definite conclusion can very well be reached.

The vaccine employed—referred to as Strain 19—is manufactured under strict governmental supervision and consists of a culture of *Brucella abortus bacilli*, which is non-pathogenic to cattle. If adult animals, vaccinated as calves, continue apparently immune, it would appear that the disease practically could be eradicated after a few generations of cattle have been so treated. Apparently with this thought in mind, advocates of calfhood vaccination succeeded in having legislation passed this year in Massachusetts, Chapter 314, Acts of 1938, which reads as follows:

Chapter one hundred and twenty-nine of the General Laws is hereby amended by adding after section thirty-six A, inserted by chapter four hundred and twenty-six of the acts of nineteen hundred and thirty-five, the following new section: — *Section 36B*. The director or his agent, with the approval of the owner of the cattle hereinafter referred to, may vaccinate cattle not less than four nor more than eight months of age, which in the judgment of the director or such agent may cause the spread of Bang's disease; provided, that such vaccination is supervised under rules and regulations of the department of agriculture, authority to make the same being hereby granted. For each animal so vaccinated the director shall collect a fee of fifty cents.

Under this law the following rules and regulations were promulgated:

RULES AND REGULATIONS

APPLYING TO THE VACCINATION OF CALVES BETWEEN THE AGES OF FOUR AND EIGHT MONTHS UNDER THE PROVISIONS OF CHAPTER 314, ACTS OF 1938

1. Owners of cattle desiring assistance from the Commonwealth of Massachusetts in the prevention of Bang's abortion disease may apply to the Director of Live-stock Disease Control for the vaccination of any or all calves in their possession not less than four nor more than eight months of age. The application, signed by the owner or his authorized representative, shall be made on forms prescribed by said Director and be accompanied by the fee prescribed by law.
2. The application shall give complete information as to the number of calves to be vaccinated, the date of birth of each such calf, its breed and sex, and the ear-tag or registration number of its dam.

3. The applicant shall agree to notify the Director in writing of such disposition as may be made of each and every calf after vaccination; the date when such calf, if a heifer, is bred; the date of calving after breeding; and, if requested, shall submit for laboratory examination a blood sample drawn prior to breeding.
4. Said applicant shall agree to waive all liability on the part of the Commonwealth of Massachusetts or its agents in the application of the treatment or any unfavorable results that may occur through the use of the vaccine.
5. The applicant or his representative shall agree to comply with these rules and regulations and such additional rules and regulations as the Director of Livestock Disease Control may prescribe from time to time.

CHARLES F. RIORDAN,
Director of Livestock Disease Control.

Approved:

WILLIAM CASEY,
Commissioner of Agriculture

Approved in Council July 7, 1938.

WILLIAM L. REED,
Executive Secretary.

Approved as to form:

RAYMOND E. SULLIVAN
Assistant Attorney General.

Owing to the limited age period in which vaccination can be applied under the provisions of this law and, possibly, to the requirement of a fee of fifty cents on each animal vaccinated, the demand for this service has been limited. Five requests for vaccination were received and seventeen calves were vaccinated.

HOG CHOLERA

Weather conditions during the major part of the year were unusually favorable to the successful raising of swine, resulting in comparatively few reports of serious outbreaks of any of the various diseases to which swine are subject.

During the year 81,329 treatments for and in prevention of hog cholera were applied by veterinarians in the employ of the Division on 932 premises. In addition, 39,515 treatments were applied on 1,148 premises by veterinarians in private practice.

In addition to the above, 25,481 treatments for infection in swine other than cholera were applied by State-employed veterinarians and 8,254 treatments by veterinarians in private practice.

RABIES

In the report of the Division for the year 1937, attention was called to the disturbing fact that rabies in animals was apparently increasing. The record for that year showed a decided upward trend in the number of cases reported. It is therefore gratifying to report that for the year 1938 the records of the Division show a substantial reduction in the number of rabies cases reported (60 cases, as compared with 218 in the year 1937). Even more gratifying is the fact that this number (60 cases) is the lowest number reported in this State any year since 1917.

The factor, or factors, responsible for so great a reduction in the total number of such cases are difficult to determine. Preventive or protective vaccination by veterinarians in private practice and at clinics sponsored by local boards of health can be accorded some credit without question, although records show that there were fewer clinics held in 1938 (35 in number) and fewer dogs (11,361) vaccinated at such clinics than in 1937, in which year 45 clinics were held and 13,498 dogs were treated. It is quite apparent also that clinics have not always met with popular approval in communities where held. This fact has been indicated by the low percentage of dogs, licensed or unlicensed, which have been presented for treatment. Publicity through radio broadcasts and news releases doubtless has been effective to some extent in making the public rabies-conscious, and has resulted in a more careful supervision of dogs by their owners and in a more prompt reporting of animals suspected as possibly affected with rabies.

Whatever the explanation may be, it is imperative that there be no relaxation of effort in the enforcement of existing dog laws, in the prompt quarantining and reporting of suspected animals, and, possibly, in the continuation of vaccination clinics.

An example of the manner in which rabies can be spread is the case which occurred during the year in which a dog, owned in Andover, left home and made its way to Portsmouth, New Hampshire, where it was harboured a few hours. It disappeared from Portsmouth and shortly afterward was found in Dover, New Hampshire. The owner, identified by the name on the dog's collar, was notified and the dog was returned to Andover, but escaped from home and was again found in the neighborhood. A veterinarian who was then called in for advice made a diagnosis of rabies. The dog is known to have bitten the owner's son in Andover, and, during the period of its travels, a veterinarian and a dog in Dover, New Hampshire.

Rabies was reported this year in 23 of the 76 cities and towns recorded in 1937, in addition to which cases were reported in 14 additional cities and towns, making a total of 37 cities and towns in which the disease was known to exist in 1938.

1938 — RABIES BY TOWNS — DOGS

Andover	4	East Bridgewater	1	Norwood	1
Attleboro	1	Fitchburg	1	Peabody	2
Billerica	1	Grafton	1	Reading	2
Boston	1	Haverhill	1	Rowley	2
Boxford	1	Ipswich	1	Saugus	3
Braintree	1	Lawrence	1	Stoughton	1
Brockton	1	Lowell	4	Sutton	2
Canton	1	Malden	1	Uxbridge	1
Chelsea	1	Methuen	2	Westboro	6
Danvers	2	Milton	1	Wilmington	2
Dunstable	1	Newbury	1	Worcester	3
Erving	1	Newton	1	Wrentham	1

1938 — RABIES BY TOWNS — MISCELLANEOUS

	<i>Cat</i>	<i>Cow</i>
Cambridge	1	—
Dunstable	—	1

1938 — RABIES BY COUNTIES

	<i>Towns</i>	<i>Cases</i>
Bristol	1	1
Essex	10	19
Franklin	1	1
Middlesex	9	15
Norfolk	6	6
Plymouth	2	2
Suffolk	2	2
Worcester	6	14
Total	37	60

RABIES

	SHOWING SYMPTOMS			CONTACT				BITE CASES				Total
	Positive	Negative	Questionable	Released	Killed or died, no symptoms	Killed—posi- tive	Disposal pending	Released	Killed—no examination	Killed— negative	Disposal pending	
Forward, Year 1937.....				23				186				209
December, 1937.....	6	1		2				414		17		440
January, 1938.....	9	2		36	8	1		434		14		504
February.....	9	7		5				424		18		463
March.....	7			7				584	6	16		620
April.....	5	2	1	27				843	3	9		890
May.....	7	3		3				923	5	19		960
June.....	4	2	2	8				988	7	32		1,043
July.....	5	1	2	2				971	7	14		1,002
August.....	1	2	5	9				836	7	17		877
September.....	2			2				659	1	18		682
October.....	2	3		14				582	1	15		617
November.....	2	3	2					401	1	23		432
Forward.....							14				172	186
Total.....	59	26	12	138	8	1	14	8,245	38	212	172	8,925
The above record refers to the following animals:												
Cats.....		1	1	1				40	1	20		64
Cattle.....				4		1						5
Chimpanzees.....								3		1		4
Dogs.....	59	23	11	133	8		14	8,201	37	186	172	8,844
Goat.....		1								1		1
Mice.....								1				2
Rabbit.....										1		1
Sheep.....		1										1
Squirrels.....										3		3

Total positive cases, 60

The heads of 304 animals were received for laboratory examination. Of this number 52 were reported by the laboratory as positive for rabies, 240 as negative, and 12 as questionable.

One hundred forty-three (143) persons were reported as having been bitten by rabid animals or exposed to them.

The number of animal-bite cases reported during the year is 10,640, as compared with 8,355 reported in 1937.

The number of stray or "owner unknown" dogs reported as placed under restraint or quarantined on premises other than those of the owner has increased steadily, owing to greater activity on the part of public health officials in requiring a report of all injuries inflicted by animals through biting or scratching. This increase in number resulted in more liability year by year for the expense of quarantine. Under the law (Section 29 of Chapter 129 of the General Laws, as appearing in the Tercentenary Edition), the Division of Livestock Disease Control was liable for this expense. As this Division believed that such expense rightfully should be paid from the dog tax fund, a bill was prepared and presented to the legislature in 1938, and accordingly the law was amended by Chapter 308, Acts of 1938, by which the county in which the biting or scratching takes place is now responsible for such expense.

Section twenty-nine of chapter one hundred and twenty-nine of the General Laws, as appearing in the Tercentenary Edition, is hereby amended by adding at the end the following:—, except that, in the case of any animal quarantined for biting or scratching a person, the expense of such quarantine shall be paid by the county in which the injury was inflicted, — so as to read as follows:— *Section 29.* If animals have been quarantined, collected or isolated upon the premises of the owner or of the person in possession of them at the time such quarantine is imposed, the expense thereof shall be paid by such owner or person; but if specific animals have been quarantined or isolated under section eight or twenty-one for more than ten days upon such prem-

ises, as suspected of being affected with a contagious disease, and the owner is forbidden to sell any of the product thereof for food, or if animals have been quarantined, collected or isolated on any premises other than those of such owner or person in possession thereof, the expense of such quarantine shall be paid by the commonwealth, except that, in the case of any animal quarantined for biting or scratching a person, the expense of such quarantine shall be paid by the county in which the injury was inflicted.

EQUINE ENCEPHALOMYELITIS

Encephalomyelitis in horses in the Commonwealth of Massachusetts was first reported to this Division on August 15. Investigation, however, revealed that previous to that date the disease had been diagnosed as early as the month of June in one case, followed by a few scattered cases in the month of July. It was found, also, that at the time of the report of August 15 a number of horses were already under treatment and several had died. During the months of August and September the disease became practically epidemic in the southeastern section of the State, in an area which may be described as drained by the Taunton River, as more than eighty percent of the total number of recorded cases occurred in Bristol, Norfolk, and Plymouth Counties.

That the disease was not reported more promptly was without doubt due to a lack of knowledge regarding the disease on the part of horse owners who had not sought veterinary advice and also to the mistaken belief that the sickness, which in many instances resulted in death within forty-eight hours of the onset of symptoms, was caused by poison, indigestion, etc. Where professional service was sought, the veterinarians, apparently unfamiliar with the disease, did not at first recognize the condition, in many instances making a diagnosis of heat-stroke, forage poison—especially horse-tail weed poison—ptomaine poison, etc.

Immediately after confirming the report that the disease in horses was prevalent in the State, publicity was given by the Division through radio broadcasts, newspaper releases, and by letters to inspectors of animals in all cities and towns in the Commonwealth.

Reports regarding the occurrence of equine encephalomyelitis in the Middle and Western States had come to the attention of the Division with increasing frequency during the past few years, variously described as cornstalk disease, sleeping sickness, spinal meningitis, etc. It was not until the year 1931, however, when as a result of study of an epidemic in California, the causative agent of the disease, a specific virus, was revealed. Each succeeding year the disease, epidemic in extent, appeared farther eastward and southward, as a rule in widely scattered areas, and for the first time appeared in Massachusetts this year.

Following the discovery of a specific virus as the causative agent, it was found further that there are at least two, and possibly more, distinct strains of virus, one classified as the Western strain—found exclusively in the area west of the Appalachian mountain chain—and the other as the Eastern and more virulent strain, found east of that barrier. Both strains cause identical symptoms, but differ entirely as to immunization qualities; i. e., an animal that has recovered from infection by one strain or which has been given preventive or immunization treatment against that strain is apparently immune to that particular strain but is susceptible to infection by the other strain and may become infected. This knowledge has an important bearing in reference to treatment, both preventive and curative.

Brain specimens from Massachusetts cases were submitted to the United States Bureau of Animal Industry at Washington for diagnosis and virus of the Eastern type was recovered from four of these specimens.

As this disease occurs invariably during warm weather, generally in areas and during periods favorable to the propagation of insect life and rarely if ever affects all horses on any one premises, and as outbreaks subside upon the appearance of frosty or freezing weather, there is little doubt but that the vective agents are insects of the blood-sucking type. The supposition that the mosquito was the carrier of the

infection in the Massachusetts epidemic is borne out by the fact that heavy rains alternated with periods of extremely hot weather throughout the summer months and created conditions unusually favorable to the production of insect life, resulting in a heavy infestation of mosquitoes, particularly during the month of August.

From data obtainable, deaths in this State took place in about ninety per cent of the horses affected. Of those that recovered some did so apparently without treatment, some with medicinal treatment alone, and some as a result of biological treatment. Evidence available tends to indicate that vaccination, if given early; i.e., before infection, will convey protection against this disease for a period long enough to carry over at least one season.

Due to failure on the part of owners, from lack of knowledge regarding the disease, and delay on the part of veterinarians in reporting cases at first, the exact number of deaths is uncertain. By checking with rendering companies, etc., it is estimated that the disease was responsible for the death of at least 269 horses in the State this year.

The following tables give information as to the counties, towns, and months in which deaths were reported.

<i>Counties</i>	<i>Towns</i>	<i>June</i>	<i>July</i>	<i>Aug.</i>	<i>Sept.</i>	<i>Oct.</i>	<i>Nov.</i>	<i>Total</i>
Berkshire	2	—	—	—	—	—	2	2
Bristol	17	—	—	77	29	—	—	106
Essex	5	—	—	1	2	2	—	5
Hampshire	1	1	—	—	—	—	—	1
Middlesex	16	—	—	9	17	—	—	26
Norfolk	18	—	—	40	15	—	—	55
Plymouth	21	—	4	32	21	1	1	59
Suffolk	1	—	—	1	1	—	—	2
Worcester	10	—	1	1	8	3	—	13
Total	91	1	5	161	93	6	3	269

TOWNS BY COUNTIES

<i>Berkshire</i> : (2)		Concord	1	<i>Plymouth</i> : (59)	
Dalton	1	Framingham	1	Abington	1
Richmond	1	Holliston	2	Bridgewater	5
<i>Bristol</i> : (106)		Hopkinton	1	Brockton	4
Attleboro	7	Newton	1	Duxbury	1
Berkley	5	Reading	3	E. Bridgewater	1
Dartmouth	2	Stow	3	Halifax	4
Dighton	5	Sudbury	2	Hanover	3
Easton	2	Tyngsboro	1	Hingham	5
Fall River	2	Waltham	1	Kingston	1
Freetown	6	Watertown	3	Lakeville	1
Mansfield	3	Wayland	2	Marshfield	2
No. Attleboro	2	Weston	2	Middleboro	8
Norton	4	Woburn	1	Norwell	2
Raynham	10	<i>Norfolk</i> : (55)		Pembroke	3
Rehoboth	26	Canton	4	Plympton	1
Seekonk	7	Cohasset	2	Rochester	2
Somerset	3	Dedham	1	Rockland	1
Swansea	7	Dover	1	Scituate	1
Taunton	14	Foxboro	3	Wareham	1
Westport	1	Holbrook	5	W. Bridgewater	8
<i>Essex</i> : (5)		Medfield	1	Whitman	4
Georgetown	1	Medway	3	<i>Suffolk</i> : (2)	
Gloucester	1	Milton	3	Boston	2
Ipswich	1	Norwood	1	<i>Worcester</i> : (13)	
Merrimac	1	Plainville	7	Douglas	1
Salisbury	1	Quincy	1	Gardner	1
<i>Hampshire</i> : (1)		Sharon	1	Hopedale	1
Hadley	1	Stoughton	4	Lunenburg	1
<i>Middlesex</i> : (26)		Walpole	3	Mendon	1
Ashland	1	Westwood	7	Shrewsbury	2
Cambridge	1	Weymouth	5	Sutton	1
		Wrentham	3	Uxbridge	3
				Westminster	1

Following is a tabulation of the horse census in Massachusetts as obtained from the Massachusetts Division of Corporations and Taxation for the year 1937:

Barnstable	278	Hampshire	2,625
Berkshire	2,960	Middlesex	3,887
Bristol	2,647	Nantucket	45
Dukes	123	Norfolk	1,698
Essex	2,457	Plymouth	1,393
Franklin	2,392	Suffolk	815
Hampden	2,119	Worcester	5,430
			<hr/> 28,869

It is interesting to note that the report for the year 1897, obtained from the same source, gives the horse census as 200,404.

In connection with this outbreak reports were received of deaths in pigeons on or adjacent to premises on which horses affected with encephalomyelitis had been reported, and that the Eastern strain of virus was recovered from the brain of one of the pigeons.

Little is actually known as yet regarding the carrier feature of the disease, the source from which the infection is derived, or as to how the virus is perpetuated

from year to year. However, owners of horses, especially in areas where the disease occurred this year, should be warned against pasturing horses at night and advised to have their horses given preventive vaccination prior to mosquito time, preferably as early as April in the coming year.

At the forty-second annual meeting of the United States Live Stock Sanitary Association held in Chicago, in the section of the program on miscellaneous transmissible diseases, Charles F. Riordan, Director of the Division, read a paper entitled *Massachusetts Experiences an Invasion of Equine Encephalomyelitis, Eastern Type*.

Public health: The occurrence of several cases of encephalitis in children during the period of the epidemic of encephalomyelitis in horses led public health authorities to study the possible relationship between the disease affecting horses and that affecting humans. A result of this study was the recovery of the Eastern type of equine encephalomyelitis from the brains of several persons who died of clinically diagnosed encephalitis. This discovery connecting the incidence of the disease in humans to the disease in animals is of grave importance as a human health problem and adds to the responsibility of the Division of Livestock Disease Control in the Prevention and control of the spread of this disease.

ANTHRAX

Early in the month of November the attention of the Division was called to a reported outbreak of anthrax affecting mink on premises in the State where this type of fur-bearing animals are raised for commercial purposes. While the investigation which was started immediately did not determine the original source of the infection, it did result in information of unusual interest.

Although the raising of fur-bearing animals is an industry engaged in apparently to a considerable extent in this State and although there is a large number of farms or minkeries scattered throughout the State where mink alone are raised, this outbreak of anthrax with its resulting deaths was traced to only three premises located as follows: Wayland, where 58 out of 100 mink died; Wilmington, where 7 out of approximately 1,000 died; and Lawrence, where 12 out of approximately 500 died.

The usual diet for mink consists of a mixture of meat, fish, and cereal. The meat in many instances is purchased from knackers and persons engaged in the business of collecting dead animals. In this outbreak the meat fed was all obtained from the same source of supply and in each instance deaths all occurred within a few hours after feeding over a period of five days. Contamination of the meat with rat poison was suspected and the carcass of one dead mink, together with a portion of the suspected meat, was submitted to a laboratory connected with the Harvard Medical School. This laboratory eventually isolated pure cultures of the bacillus of anthrax from both the mink carcass and the meat specimen.

Each owner had removed the pelts of the dead animals, one owner himself contracting anthrax which necessitated hospitalization.

While it was found that flesh taken from carcasses of dead animals (horses and cattle) is regularly sold for feeding purposes to persons engaged in the raising of all species of fur-bearing animals, the meat in this case was from a horse purchased from a local sales stable on October 26 alive and in apparent good health. The animal was then destroyed and moved by the knacker to premises used in the handling of dead animals, at which premises the hides are removed and the carcasses cut up for disposal for rendering purposes, etc.

This horse was traced back to several different owners without obtaining evidence as to where the animal could have become infected with anthrax before being killed or where the carcass after death could have become infected.

All dead animals handled at this establishment during the ten-day period prior to the outbreak were traced back to their owners and the cause of death checked without obtaining information of any value. The variance in the number of mink affected at the different premises is explained by the fact that at Wayland a generous supply of the meat from the suspected horse had been fed, whereas at the other two places only a very small portion had been mixed with the food. At several other

minkeries where meat from the same horse is said to have been used there were no unfavorable aftereffects.

Owners of infected minkeries were required to clean and disinfect all cages in which deaths had occurred as well as buckets, pans, food grinders, etc., and to destroy all remaining meat by burning. The walls of the building used by the knacker were scraped and disinfected; barrels, tools, etc., were cleaned and disinfected; and new cement floors were laid. The pelts from the dead mink were held in quarantine and subjected to disinfection in accordance with Federal government requirements, after which they were released on approval of the State Department of Public Health.

The entire investigation was conducted in cooperation with the State Department of Public Health and the local office of the United States Bureau of Animal Industry.

MISCELLANEOUS DISEASES

Actinomycosis. — (Commonly called "lump jaw.") Seventeen (17) animals suspected of having this disease were reported during the year. Upon examination 13 animals were declared affected with the disease, and were condemned and disposed of by slaughter; 1 animal was declared not affected; and 3 cases have not yet been closed.

Blackleg. — Preventive treatment was applied to 1,748 animals on 165 premises located in 56 towns. This service is rendered without charge upon the request of owners of young cattle in districts where pastures infected with the disease are located.

Glanders. — No case of glanders occurred in Massachusetts during the year. Seven (7) horses were reported on suspicion of having the disease but were later released after physical examination was made of 1 horse and laboratory examination was made of blood samples taken from the remaining 6 horses.

Johne's disease. — One cow was reported on physical examination as affected with this disease. Diagnosis was confirmed by laboratory examination.

Mange. — (Commonly called "barn itch.") This condition was reported in 17 head of cattle on 4 premises.

Avian tuberculosis. — This condition was reported in poultry in one flock of Marthas Vineyard. Diagnosis was made at the laboratory of the Massachusetts State College.

ANNUAL INSPECTION OF NEAT CATTLE, SHEEP, AND SWINE

In accordance with section 19, Chapter 129 of the General Laws, the annual inspection of neat cattle, sheep, and swine, and of the premises where kept was ordered on November 12, 1937, to be completed on or before January 1, 1938.

From reports received from the 355 cities and towns in the Commonwealth, inspections were made of 23,048 premises, on which were located 208,445 head of cattle, 7,334 sheep, 75,312 head of swine, and 2,527 goats. Of the total number of cattle reported, 147,636 were listed as dairy cows; 2,314 bulls and 17,275 cows were recorded as purebreds.

Regional meetings of inspectors of animals were held in the month of November at Boston, Greenfield, Pittsfield, Springfield, and Worcester, for the purpose of giving information and instruction relative to the duties of the inspectors of animals.

FINANCIAL STATEMENT

APPROPRIATION CLASSIFICATION	APPROPRIATION	EXPENDITURES
Director's salary	\$ 4,000.00	\$ 4,000.00
Personal services	26,870.00	26,378.55
Expenses (office)	9,500.00	
Brought forward, 1937 appropriation	121.87	8,991.10
Personal services, veterinarians and agents	70,800.00	
Brought forward, 1937 appropriation	21.00	69,313.39
Traveling expenses, veterinarians and agents	20,500.00	
Brought forward, 1937 appropriation	130.68	17,479.56
Extermination	6,050.00	
Transferred, appropriation for small items	14.55	
Brought forward, 1937 appropriation	87.96	4,823.09
Reimbursement for certain cattle killed	43,300.00	
Brought forward, 1937 appropriation	1,883.99	36,751.73
Reimbursement to towns for inspectors of animals	5,200.00	
Brought forward, 1937 appropriation	117.00	5,278.77
	<hr/>	<hr/>
	\$188,597.05	\$173,016.19
Unexpended balance		15,580.86
	<hr/>	<hr/>
	\$188,597.05	\$188,597.05

The average amount paid for cattle slaughtered under the provisions of Chapter 129, General Laws, as amended, was \$56.62 for registered purebred cattle and \$33.85 for grade cattle.

There has been received during the year for hemorrhagic septicemia treatments at Brighton, \$348.00; for calfhood vaccinations, \$8.50; and for cattle dealers' licenses, in accordance with Chapter 426, Acts of 1935, \$2,010.00 (of which amount \$1,420.00 applies to 1938 Licenses).

Financial Statement verified.

Approved.

GEO. E. MURPHY,

Comptroller.

Respectfully submitted,

CHARLES F. RIORDAN,

Director.

